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EXAMINER

LIU, HARRY K

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/574,789 | Applicant(s) GAZIT ET AL. | |
| | Examiner HARRY LIU | Art Unit 3662 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11, 13-24 is/are rejected.
- 7) ☒ Claim(s) 9-10, 12 and 25-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of applicant's amendment filed (2/13/2008). Claim 34 has been canceled without prejudice. Claims (1-33) are pending and an action on the merits is as follows.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 7-8, 13-20, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKay (2004/0166802) in view of Zourntos (2003/0100343).

Regarding claims 1, 2, 8, McKay discloses a **low cost phased array** antenna assembly adapted for reducing severe radiation hazards to the human body, useful for transmitting and receiving signals while taking into account the indoor/in building (closed space, claim 2) (Abstract) electromagnetic field strength, said antenna design (an indoor cell enhancer boosts signal for reducing wireless device transmission power under indoor weak signal situation in order to reduce severe radiation) comprising;

a micro-strip small size antenna (patch antenna, see FIG. 17 below) (a micro strip antenna is commonly shown as patch antenna, see Wikipedia definition);

inherently a switching device for selecting phase (paragraph 0089-0090),
receiving/transmitting frequencies (array antenna receives and retransmits between
base station and user with a switch) (Abstract);

a controller (microcontroller 256, see FIG. 19)/ASIC (claim 8) adapted to receive
inputs from said switching device comprising; coordinating means, adapted to
interconnect said switching device with an algorithm based software (programmable
device, paragraph 0106);

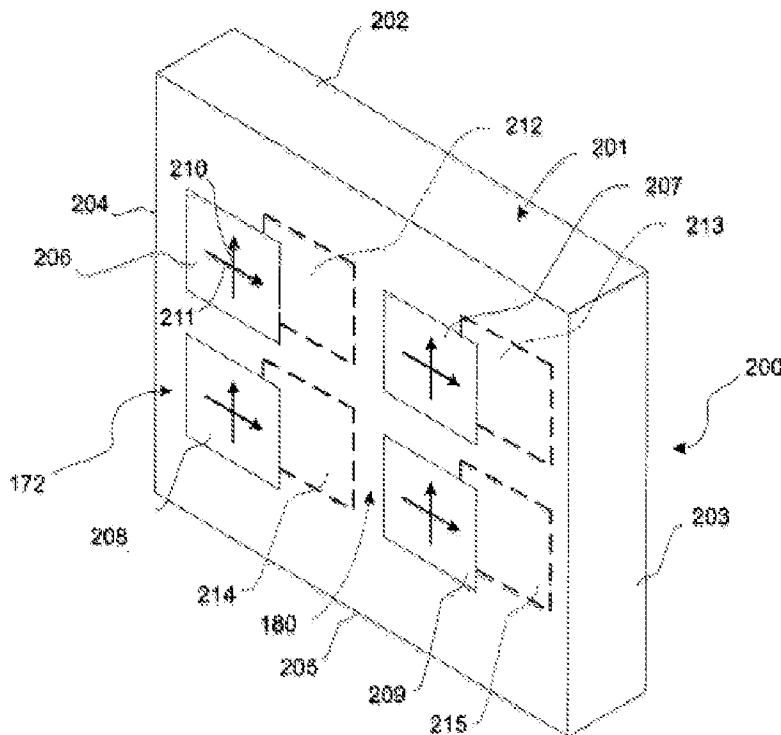


FIG 17

Mckay does not to disclose memory queue for recording optimal path in each indoor environment to each of associated nodes to said antenna. However, Zourntod teaches memory queue (paragraph 0127) for antenna array (Abstract) in recording (keep track of, paragraph 0200) optimal path (paragraph 0478). It would have been obvious to modify McKay with Zourntos by incorporating memory queue to record optimal path in each indoor environment in order to optimize/use each space's characteristics.

Regarding claims 3-4, Mckay discloses the closed construction and openings includes claimed structures (small office includes door, windows floor, paragraph 0013).

Regarding claim 7, Mckay as modified with Zourntos discloses an indoor antenna array assembly (repeater). A repeater/cell enhancer is for relaying signals for the indoor mobile to compensate for path loss. It would have been obvious to design the assembly to compensate the path loss as claimed.

Regarding claim 13, Mckay discloses a cell enhancer which is used for cellular signal, the antenna and its associated clients are interconnected/relayed through the enhancer to a common network (cellular system).

Regarding claim 14-16, Mckay discloses an indoor signal enhancer which inherently implies communicates between one closed construction to another closed construction (claim 14); an indoor cell enhancer is also known as indoor repeatr which serves several spots in one or several buildings with one master operator/control (claim 15) and one repeater is busy will be replaced by another repeater or cell. An indoor RF repeater is sometimes not necessarily taking signal from just one cell in CDMA cellular

system which is in soft handoff situation, a soft handoff is known capable of using another cell while one cell has no RF channel available.

Regarding claim 17, McKay discloses a cellular indoor enhancer. A calling device (cell phone) is known has its own identification for billing purposes.

Regarding claim 18-20, McKay as modified with Zourntos discloses an indoor antenna array assembly with horizontal and or vertical polarization (paragraph 0086). An array is known with dimension ($n \times m$) of elements with corresponding number of phase shifters.

Regarding claims 23-24, McKay discloses the symmetry of ofmirrored beam is referred to a predetermined axis (see FIG. 17).

3. Claims 5, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKay (2004/0166802) in view of Zourntos (2003/0100343), as applied to claim 1 rejection above, and further in view of Rappaport (2004/0143428).

Regarding claim 5, 21-22, McKay, as modified with Zourntos as applied to claim 1 rejection above, discloses all claim limitations except for disclosing the claimed equation with mode number, reflection factor or operating at frequency 900MHz to about 6 GHz, 2.4 GHz to 5.8 GHz (claims 21-22). However, Rappaport teaches path loss equation (paragraph 0012), mode, reflection factor (paragraph 0091) and use at claimed frequencies (paragraph 0012). It would have been obvious to further modify McKay with Rappaport with claimed path loss equation in order to get an optimized calculation for indoor environment under data communication application.

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4. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKay (2004/0166802) in view of Zourntos (2003/0100343) further in view of Maca (2006/010575).

Regarding claim 22, McKay as modified with Zourntos, as applied to claim 1 rejection above does not disclose the broadband antenna adapted to operate at the band with about 2.4 GHz and 5.8GHz. However, Maca teaches the use of antenna array for broadband (Abstract) in the claimed frequency band (paragraph 0020). It would have been obvious to further modify McKay with claimed feature in order to be used in the popular broadband application.

5. Claims 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKay (2004/0166802) in view of Zourntos (2003/0100343) further in view of Rappaport (2004/0143428), as applied to claim 5 rejection above, and furthermore in view of Chen (Home Network Basis: Transmission Environments and Wired/Wireless Protocols, Prentice Hall).

Regarding claims 6, 11, Mckay, as modified with Rappaport as claim 6 rejection above, discloses all claim limitations except for claimed equation. However, Chen teaches the equation of using reflection factor. It would have been obvious to furthermore modify Mckay in order to calculate the path loss with reflection factor considered.

Allowable Subject Matter

6. Claims 12, 25-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: a CWS (cell-wall socket) used for antenna assembly; any polarization desired by the user are not taught nor obvious over the prior.

Response to Arguments

Applicant's arguments filed (2/13/2008) have been fully considered but they are not persuasive.

Applicant argues for claim 1 that McKay **only** refers to cellular communication system which is not enabled for **any** wireless communication system. A cellular phone system is a wireless communication system. Applicant does not rule out the invention can be implemented in a cellular phone system.

Applicant argues for claim 1 that McKay only refers to E911 emergency not in **any** wireless environment. E911 is one of the most known application in location acquisition, location based services (LBS) is another commonly **known** application for finding position of a mobile.

Applicant argues for claim 1 that Zourntos teaches memory queue and signal processing engine is located at a central router. Applicant does not rule out the memory

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queue can be found in a router which happens to locate in the antenna array assembly. Plus, it is known a router is a switching device which is claimed in claim 1 and an indoor environment can a network/system by itself which also includes a router with memory queue and signal processing engine.

Applicant argues for claim 1/claim 7 that McKay only teaches a specific polarization which is different from the current invention that **requires no particular polarization** for enablement. This feature is not claimed in claim 1. Similarly for claim 7, applicant argues that a cellular phone is not equal to a mobile or wireless device. A cell phone is definitely a mobile (that's why it is called car/mobile phone in early 80's) and a wireless device.

Applicant argues for claim 13 that McKay teaches only cellular network not any wireless network. Refer to the response for claim 1 above.

Applicant argues for claim 18 that McKay as modified by Zourntos only teaches the case of cross-polarization which is different from current invention that allows **any polarization chosen by user**. This feature is not claimed.

Applicant argues for claim 6, 11 that McKay as further modified by Rappaport is an optimal path instead of optimal **signal path** itself. This feature is not clearly claimed.

Purpose of use/intended use does not limit the usefulness of the prior art referenced. This suggestion applies to all claims specified above and the arguments for claims 5, & 21-22.

It is noted that applicant does not separately argue for the feature of other claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Liu whose telephone number is 571-270-1338. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, please **leave a voice message** with application serial number and nature of call, a response within 24 hours can be expected during regular business days. Also, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-270-2338.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry Liu/
Examiner, Art Unit 3662

April 28, 2008

/Thomas H. Tarcza/
Supervisory Patent Examiner, Art Unit 3662